

WHAT IS CLAIMED IS:

1. A chemically defined medium (CDM) suitable for growth of immortalized mammalian cells in culture, said media comprising at least one or more of ammonium metavanadate, cadmium chloride, chromic potassium sulfate, ferric citrate, germanium dioxide, molybdic acid, salt or ammonium salt, nickel sulfate, zirconium chloride and/or hydrocortisone, or any suitable form, salt, halide, hydrate, solution, suspension, emulsion, or colloid thereof.
2. In a chemically defined medium suitable for growth of immortalized mammalian cells in culture, the improvement comprising said media comprising at least one or more of ammonium metavanadate, cadmium chloride, chromic potassium sulfate, ferric citrate, germanium dioxide, molybdic acid, salt or ammonium salt, nickel sulfate, zirconium chloride and/or hydrocortisone, or any suitable form, salt, halide, hydrate, solution, suspension, emulsion, or colloid thereof.
3. A chemically defined medium according to claim 1, said medium suitable for growth of immortalized mammalian cells in culture, said medium comprising
4. A chemically defined medium according to claim 1, said medium suitable for growth of immortalized mammalian cells in culture, said medium comprising , sodium chloride, 3-5 g/L; potassium chloride, 0.2-0.4 g/L; , HEPES, 5-7 g/L; glucose (dextrose), 3.5-5.5 g/L; biotin, 0.000005-0.000025 g/L; ascorbic acid, 0.002-0.004; pantothenate, 0.002-0.006 g/L; choline, 0.002-0.006 g/L; folate, 0.002-0.006 g/L; inositol, 0.005-0.02 g/L; niacinamide, 0.002-0.006 g/L; pyridoxal, 0.002-0.006 g/L; riboflavin, 0.0002-0.0006 g/L; thiamine, 0.002-0.006 g/L; cyanocobalamin, 0.000005-0.000025 g/L; oxaloacetic acid, 0.1-0.4 g/L; alanine, 0.015-0.035 g/L; asparagine, 0.01-0.035 g/L; arginine, 0.06-0.10 g/L; aspartate, 0.02-0.04 g/L; cysteine, 0.3-0.5 g/L; cystine, 0.05-0.2 g/L; glutamine, 0.8-1.5 g/L; glutamate, 0.06-0.09 g/L; glycine, 0.02-0.04 g/L; histidine, 0.03-0.05 g/L; isoleucine, 0.05-0.25 g/L; leucine, 0.05-0.25 g/L; lysine, 0.05-0.25 g/L; methionine, 0.02-0.04 g/L; phenylalanine, 0.055-0.075. proline, 0.03-0.05 g/L; serine, 0.03-0.055 g/L; threonine, 0.07-0.15 g/L; tryptophan, 0.005-0.025 g/L; tyrosine, 0.05-0.15 g/L; valine, sodium selenate, 0.0000005-0.000060; magnesium sulfate, 0.05-0.2 g/L; potassium chloride, 0.15-0.45 g/L; sodium

phosphate, 0.075-0.2 g/L; potassium nitrate, 0.00005-0.00009 g/L; calcium chloride, 0.08-0.25 g/L; sodium pyruvate 0.05-0.4 g/L; insulin, 0.05-2 g/L; hydrocortisone, 20-80 g/L; linoleic acid, 1-100 mg/L; ethanolamine, 5-25 g/L; sodium bicarbonate, 1-5 g/L; APO transferrin or ferric citrate, 1-10 mg/L; Pluronic F68, 0.2-2 g/L; sodium hydroxide, 0.3-0.9 g/L; mycophenolic acid, 0.1-2 mg/L; hypoxanthine, 2-5 mg/L; xanthine; 10-200 mg/L; sodium bicarbonate 1.5-4.5 g/L.

5. A mammalian cell line cultured in a chemically defined media according to claim 1.
6. A protein expressed from a cell line according to claim 3.
7. A protein according to claim 4, wherein said protein is selected from a therapeutic protein or a diagnostic protein.
8. A protein according to claim 5, wherein said protein is selected from an immunoglobulin, a soluble receptor, a transmembrane protein, a cytoplasmic protein, a soluble protein, an extracellular protein, a fusion protein, an antibody fusion protein, or any fragment or portion thereof.
9. A protein according to claim 6, wherein said immunoglobulin is selected from an IgG, an IgA, IgD, IgE, and an IgM.
10. A protein according to claim 7, wherein said IgG is selected from an IgG1, and IgG2, and IgG3 and an IgG4.
11. A protein according to claim 6, wherein said immunoglobulin fragment or portion is at least one selected from a fab, a fab', a F(ab')₂, a scFv.
12. A protein according to claim 6, wherein said immunoglobulin is selected from a rodent, a human, a chimeric, a humanized, grafted, or a primate immunoglobulin or fragment thereof.
13. A formulation comprising a chemically defined media according to claim 1.
14. A formulation comprising a chemically defined media according to claim 2.
15. A container, comprising a chemically defined media according to claim 1.

16. A container, comprising a chemically defined media according to claim 2.

17. A method for providing a chemcially defined media, comprising

combining a chemically defined media and at least five of aluminum chloride, ammonium metavanadate, barium chloride, cadmium chloride, cobalt chloride, chromic potassium sulfate, cupric sulfate, ferric citrate, germanium dioxide, magnesium chloride, manganese sulfate, molybdc acid, salt or ammonium salt, nickel nitrate, potassium bromide, potassium iodide, rubidium chloride, silver chloride, sodium fluoride, zinc sulfate, and/or hydrocortisone, or any suitable form, salt, halide, hydrate, solution, suspension, emulsion, or colloid thereof, to provide a chemically defined media.

18. A chemically defined media produced by a method according to claim 17.